WHAT IS CLAIMED IS:

1. A router having plunge-type operability for driving a router bit and controlling the depth of cut of a router bit relative to a work piece, said router being useable in an upright and in an inverted position, comprising:

a housing assembly having a drive motor being capable of driving a drive shaft to which the router bit can be attached;

a base having a generally planar outer surface and a central opening through which the router bit can extend, and at least a pair of posts operatively connected to said housing assembly;

a depth adjusting mechanism for controlling the depth of cut of the router bit relative to a baseline position, said adjusting mechanism having a plunge depth rod longitudinally adjustably connected to said housing assembly and a stop surface associated with said base for limiting the depth of cut of the router bit during operation;

a sensor for generating position signals indicative of the position of said adjustable depth rod;

input means responsive to operator manipulation for generating input signals for controlling the operation of the router;

a display responsive to information signals for providing a visual display of information relating to the operation of the router;

processing means for receiving said position and input signals and for selectively generating said information and position control signals.

2. A router as defined in claim 1 wherein said processing means is adapted to store data defining said baseline position for the router bit responsive to operator manipulation of said input means, said baseline position including a zero position of the router bit when it initially engages the work piece.

3. A router as defined in claim 1 wherein said depth adjusting mechanism includes a depth adjusting motor that is responsive to position control signals

for adjusting the position of said plunge depth rod relative to said base and thereby adjusting the depth of cut of the router bit.

4. A router as defined in claim 3 wherein said processing means receives said position signals and said input signals and responsively generates said position control signals for controlling the depth of cut of the router bit relative to said zero position.

5. A router as defined in claim 1 wherein said depth adjusting mechanism includes an engageable lock for selectively locking said plunge depth rod relative to said housing assembly, whereby said depth adjusting motor is capable of moving the plunge depth rod relative to the housing assembly when said lock is disengaged and is capable of moving the housing assembly relative to said base when the lock is engaged.

6. A router as defined in claim 1 wherein said input means generates input signals for incrementing or decrementing the depth of cut responsive to operator manipulation thereof.

7. A router as defined in claim 6 wherein said input means comprises switch means for selectively incrementing or decrementing the depth of cut responsive to operator manipulation thereof.

8. A router as defined in claim 1 wherein said display receives said information signals from said processing means and visibly displays the depth of cut in English or metric increments.

9. A router as defined in claim 1 wherein said display comprises a plurality of multiple segment characters, with each character being capable of displaying alpha-numeric characters.

10. A router as defined in claim 9 wherein said display includes a display module that includes said plurality of characters aligned in a generally predetermined orientation.

11. A router as defined in claim 10 wherein said orientation is perpendicular to the longitudinal direction of the drive motor drive shaft and is capable of being inverted generally 180 degrees.

12. A router as defined in claim 6 wherein said input means generates input signals for increasing or decreasing the speed of said drive motor and said display displays the speed of operation of said drive motor.

13. A router as defined in claim 10 wherein said display module is capable of being physically reoriented at an inverted orientation.

14. A router as defined in claim 10 wherein said display module includes two sets of said plurality of characters, one set being inverted generally 180 degrees relative to the other.

15. A router as defined in claim 9 wherein said display is one of a liquid crystal display or a light emitting diode display.

16. A router as defined in claim 3 wherein said depth adjusting motor is operatively connected to a pinion gear that engages a rack portion of said plunge depth rod, the rotation of said pinion gear in first and second directions causing said plunge depth rod to move relative to said housing assembly in first and second directions generally parallel to said drive motor shaft.

17. A router as defined in claim 3 wherein said depth adjusting motor is operatively connected said plunge depth rod which comprises an elongated screw that engages an internal thread in said plunge depth rod, said depth rod being prevented from rotation by said housing assembly, the rotation of said screw in first and second directions causing said plunge depth rod to move relative to said housing assembly in first and second directions generally parallel to said drive motor shaft.

18. A router as defined in claim 17 wherein the outer end of said elongated screw has a transverse portion capable of engaging a locking member of said base whereby said depth adjusting motor is capable of moving the plunge depth rod

relative to the housing assembly when said locking member is disengaged and is capable of moving the housing assembly relative to said base when said locking member is engaged.

19. A router as defined in claim 18 wherein said transverse portion is an annular flange formed by removing an annular portion of the screw near the outer end of the screw and said locking member is moveable relative to said base and has a keyhole shaped opening therein, a larger portion thereof being sized to permit penetration of the end of the screw therein and a smaller portion thereof being sized to engage said transverse portion and retain the screw when said locking member is moved into engagement.

20. A router as defined in claim 1 wherein said sensor comprises a digital caliper operatively connected to said plunge depth rod, said potentiometer being capable of producing an electrical signal that is indicative of the specific position of the plunge depth rod relative to the housing assembly.

21. A router as defined in claim 1 wherein said sensor comprises a rotary sensing device operatively associated with said depth adjusting motor, said device generating rotary position signals and applying the same to said processing means.

22. A router as defined in claim 9 wherein said display has at least six aligned characters, with a forward slash segment separating each pair of characters, said display being capable of displaying fractions of inches responsive to said processing means determining said fractions and generating display information and applying the same to said display.

23. A router as defined in claim 1 wherein said processing means includes memory means for selectively storing data indicative of said control signals and information relating to the operation of the router.

24. A method of specifying and controlling the depth of cut in a work piece by a plunge router of the type which has a housing assembly containing a drive

motor having a drive shaft to which a router bit can be attached, a base having a generally planar outer surface and a central opening through which the router bit can extend, and at least a pair of posts operatively connected to said housing assembly, a depth adjusting mechanism for controlling the depth of cut of the router bit relative to a baseline position, the adjusting mechanism having a plunge depth rod that is longitudinally adjustable and lockable to the housing assembly and a stop surface associated with said base for limiting the depth of cut of the router bit during operation, a sensor for generating position signals indicative of the position of the adjustable depth rod, a display responsive to information signals for providing a visual display of information relating to the operation of the router, and a processing means for receiving said position and input signals and for selectively generating said information and position control signals, comprising the steps of:

adjusting the depth adjusting mechanism to bring the router bit into contact with the surface of the work piece;

adjusting the plunge depth rod to contact the stop surface;

locking the plunge depth rod in place;

manipulating the input means to set a zero baseline position;

unlocking the plunge depth rod;

adjusting the adjusting mechanism to the desired depth of cut by observing the depth of cut values being displayed by the display; and,

locking the plunge depth rod in place.

25. A method of specifying and controlling the depth of cut in a work piece by a plunge router of the type which has a housing assembly containing a drive motor having a drive shaft to which a router bit can be attached, a base having a generally planar outer surface and a central opening through which the router bit can extend, and at least a pair of posts operatively connected to said housing assembly, a motorized depth adjusting mechanism for controlling the depth of cut of the router bit relative to a

baseline position, the adjusting mechanism having a plunge depth rod that is longitudinally adjustable relative to the housing assembly and a stop surface associated with said base for limiting the depth of cut of the router bit during operation, a sensor for generating position signals indicative of the position of the adjustable depth rod, a display responsive to information signals for providing a visual display of information relating to the operation of the router, and a processing means for receiving said position and input signals and for selectively generating said information and position control signals, comprising the steps of:

adjusting the depth adjusting mechanism to bring the router bit into contact with the surface of the work piece;

adjusting the plunge depth rod to contact the stop surface;

manipulating the input means to set a zero baseline position; and

adjusting the adjusting mechanism to the desired depth of cut by observing the depth of cut values being displayed by the display.

26. A plunge router for driving a router bit, said router being useable in an upright and in an inverted position, comprising:

a housing assembly having a drive motor being capable of driving a drive shaft to which the router bit can be attached;

a base having a central opening through which the router bit can extend, and being operatively connected to said housing assembly;

a depth adjusting mechanism for controlling the depth of cut of the router bit relative to a baseline position;

input means responsive to operator manipulation for generating input signals for controlling the operation of the router;

a display responsive to information signals for providing a visual display of information relating to the operation of the router, wherein said display comprises a plurality of multiple segment alpha-numeric characters aligned in a generally

predetermined orientation, said display being capable of being reoriented at an inverted orientation; and,

processing means for receiving said input signals and for selectively generating said information signals.

27. A router as defined in claim 26 wherein said predetermined orientation is parallel to the longitudinal direction of the drive motor drive shaft.

28. A router as defined in claim 27 wherein said predetermined orientation is perpendicular to the longitudinal direction of the drive motor drive shaft.